

REMARKS

Applicants respectfully ask for reconsideration of both this application and the Office Action dated December 30, 2003. This Amendment is being concurrently submitted with a Request for Continued Examination. Entry and consideration of this Amendment are thus courteously requested.

It is respectfully submitted that no fees are due for the consideration of this Amendment. If, however, the Commissioner deems that any fees are necessary to maintain the pendency of this application, including any fees under 35 U.S.C. §1.16 and §1.17, it is respectfully submitted that the fees be charged to the deposit account of the undersigned, Deposit Account No. 19-0733. Please consider this Amendment as timely filed.

Applicant gratefully acknowledges the personal interview granted by the Examiner and his supervisors on March 1, 2004. This Amendment is presented in accordance with the substance of that personal interview.

Claims 1-16, 18-54 and 87-136 were pending in this application. Claims 12-16, 19-23, 35, 45-54, 107-110, 113-115, and 118-120 are amended herein, and claims 24, 25, 34, 106, 111, 112, 116, 117, and 1-11, 26-33, 36-44, 56-105 and 121-136 are canceled. New claims 137-139 then are newly presented herein in order to further claim various embodiments of the invention.

In the Office Action of December 30, 2003, the Examiner rejected claims 106, 107, 111, 112, 116, 117, 122, 123, 135, and 136 were rejected under 35 U.S.C. §112, first paragraph. The Examiner also asserted that the previous amendments to the specification submitted to support the language of these claims presents new matter. Applicant respectfully traverses this rejection.

It again is respectfully submitted that the both the amendments to the specification and the language of claims 106, 107, 111, 112, 116, 117, 122, 123, 135, and 136 include matter that is inherent to the disclosure of the invention. Nonetheless, in an effort to expedite prosecution of this application, Applicant has deleted the language previously added to the claims, and either canceled or amended claims 106, 107, 111, 112, 116, 117, 122, 123, 135, and 136 herein to omit the language objected to by the Examiner. Applicant therefore asks that the rejection under 35 U.S.C. §112, first paragraph, be withdrawn.

Next, the Examiner rejection claims 12-16, 18-25, 34, 35, 45-54, 108-120, and 121-136 have been rejected under 35 U.S.C. §112, second paragraph. Applicant respectfully traverses this rejection as well, but courteously urges that it is now moot. Again, in an effort to expedite prosecution of this application, Applicant has amended there claims to omit the language objected to by the Examiner.

Claims 12, 13 16, 18, 19, 23, 24, 34, 35, 45-54, 106, 107, 111, 112, 116, 117 and 134-136 have been rejected under 35 U.S.C. §102(b) over U.S. Patent No. 4,834,474 to George et al. Applicant respectfully traverses this rejection, and courteously asks for its reconsideration. Moreover, Applicant respectfully submits that this rejection is not applicable to any of newly presented claims 137-139

As discussed in detail during the personal interview, various embodiments of the invention are directed to an optical device that receives an input optical signal at first location, processes the optical signal, and then directs the output optical signal to another location. More particularly, these embodiments receive at least one input signal at an input port. Using a

plurality of diffractive elements, these embodiments apply a desired transfer function to the input optical signal and thus create an output signal. These embodiments then direct the output signal to an output port. As discussed in the specification, the transfer function can include spectral information, temporal information, or a combination of both.

Applicant respectfully submits that this combination of features is neither taught nor suggested by the George et al. patent. As discussed during the interview, the George et al. patent describes a curved substrate marked with a series of, e.g., holographic fringes. The fringes cause incident light to be deflected so that the output light is temporally shaped (that is, the energy of the output light changes relative to the energy of the input light over the output wavefront. Nothing in the George et al. patent would teach or suggest that the input signal is received into the substrate through a first port, or that the output signal is emitted from the substrate through a second port. Moreover, nothing in the described function or intended purpose of the George et al. patent would suggest such a modification.

To further distinguish the features of the invention from the device taught in the George et al. patent, Applicant has amended claims 12, 34 and 45 to more particularly recite that a first optical signal is received at a first port, while the produced second optical signal is directed to a second port. Accordingly, Applicant respectfully submits that the George et al. patent does not teach or suggest the features of the invention recited in the claims, and courteously ask that the rejection of these claims be withdrawn.

Lastly, claims 14, 15, 20, 25, 108-110, 113-115, 118-133 were rejected under 35 U.S.C. §103 over the George et al. patent in view of U.S. Patent No. 5,165,104 to Weverka. Applicant

respectfully traverses this rejection, and urges it reconsideration. As discussed in detail during the interview, the George et al. device operates by refracting a light that is incident in a generally perpendicular direction to the surface of the substrate, and also emits the refracted light in a generally perpendicular direction to the surface of the substrate. Accordingly, the George et al. patent cannot be employed in a waveguide, which requires that incident and emitted light travel in a direction parallel to the waveguide.

Applicant therefore submits that one of ordinary skill in the art would not have been led to combine the George et al. patent with the Weverka patent in the manner suggested by the Examiner. It is thus requested that the rejection based upon the combination of the George et al. and Weverka patents be withdrawn.

In view of the above amendments and remarks, Applicants respectfully submit that all of the claims are allowable, and that this application is therefore in condition for allowance.

Applicants courteously ask for favorable action at the Examiner's earliest convenience.

Respectfully submitted,

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